

## **HOLLOW PLUNGER WITH GUIDE INTEGRATED TO BOBBIN ASSEMBLY**

### Abstract

An actuator suitable for use with a fluid flow control valve includes a  
5 frame, a bobbin, a coil and a plunger assembly. The frame is generally cylindrical and  
has a longitudinal axis. The bobbin, which is wound with the coil, includes a central  
cavity. The plunger assembly is received within the central cavity and includes a  
plunger portion and a rod portion. The plunger portion is formed of magnetic  
material. The rod portion may be snapped on the plunger portion to form the plunger  
10 assembly. The plunger assembly is configured to move within the cavity in response  
to an actuator control signal applied to the magnetic coil. Separating the plunger  
portion and the rod portion improves manufacturability as well as reduces the  
occurrence of rod damage.